JOURNAL OF MANAGEMENT AND BUSINESS SOLUTIONS

The Impact of Online Shopping on Consumers' Financial Behavior

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ABSTRACT

The expansion of electronic commerce and digital payment tools has significantly transformed financial decision-making patterns and consumer behavior. The primary objective of the present study was to investigate the impact of online shopping, particularly digital payment tools and "Buy Now, Pay Later" services, on consumers' financial behavior across its various dimensions. In terms of purpose, this study was applied research, and in terms of methodology, it employed a descriptive-survey design. The statistical population consisted of online consumers in the city of Tehran during the second half of 2025 who had completed at least three online purchases. The sample size was estimated at 384 participants based on Cochran's formula. A multistage combined sampling method was utilized. Data were collected using a researcher-developed questionnaire consisting of three sections: demographic characteristics, online shopping patterns, and financial behavior. The content validity of the instrument was confirmed through expert evaluation, and construct validity was verified using factor analysis. Reliability coefficients were obtained through Cronbach's alpha (0.87) and test–retest reliability (0.89). Data were analyzed using SPSS version 28 and Amos version 24. The findings indicated that the data did not follow a normal distribution ($p > 0.05$); therefore, nonparametric tests were applied. The results of Spearman's correlation analysis demonstrated that "the use of online installment payment services" had the strongest association with financial behavior, showing a positive correlation with impulsive buying ($r = 0.63$) and bank overdraft behavior ($r = 0.58$), and a significant negative correlation with budgeting and saving management ($r = -0.35$). Furthermore, the frequency of online purchases and nighttime shopping exhibited significant positive relationships with risky financial behaviors. The results of multinomial logistic regression analysis also revealed that the frequency of using installment payment services (OR = 2.56), frequency of online shopping (OR = 1.66), and average number of installments (OR = 1.51) were the most important predictors of membership in the very high-risk financial behavior group. In contrast, increasing age (OR = 0.93) and higher educational attainment (OR = 0.44) played protective roles against risky financial behavior. The final model correctly classified 71.4% of the sample. Overall, the expansion of online shopping and frequent use of online installment payment services increase the likelihood of risky financial behaviors, whereas higher age and educational level play protective roles in the management of financial behavior.

Keywords: online shopping, financial behavior, consumer, financial management

Introduction

The rapid expansion of e-commerce has transformed consumer behavior from a conventional, planned, and relatively observable purchasing process into a highly digitalized, immediate, personalized, and psychologically stimulating form of consumption. Online shopping environments reduce physical and temporal barriers, provide constant access to products, enable rapid price comparison, and expose consumers to algorithmically curated offers, personalized advertisements, recommender systems, and frictionless digital payment options. These

Article history:
Received 08 February 2024
Revised 11 May 2024
Accepted 18 May 2024
Published online 01 June 2024

How to cite this article:
Najafi, F. (2024). The Impact of Online Shopping on Consumers' Financial Behavior. *Journal of Management and Business Solutions, 2*(3), 1-16. https://doi.org/10.61838/jmbs.341

features have increased convenience and market efficiency, but they have also changed the structure of consumer financial decision-making by shortening the time between desire formation and payment execution. In this context, online shopping is no longer merely a commercial channel; rather, it has become a behavioral environment in which financial choices, consumption impulses, credit use, budgeting practices, and saving patterns are continuously shaped by platform design, payment architecture, and psychological triggers. Early studies on e-commerce already warned that unregulated online buying could generate negative financial and behavioral outcomes because the online environment weakens some of the social and situational constraints that normally regulate consumption decisions (1).

One of the most important behavioral consequences of online shopping is the increase in unplanned and impulsive buying. Impulsive buying has been defined as a sudden, immediate, and affectively charged purchasing tendency in which consumers experience reduced deliberation and a strong urge to buy. Classical consumer-behavior research emphasizes that impulsive buying is not only a matter of spontaneous purchase but also involves normative, emotional, and self-regulatory dimensions, meaning that individuals differ in how they evaluate, resist, justify, or enact such impulses (2). Dholakia's integrated model further explains that consumption impulse formation occurs when temptation, emotional activation, marketing stimuli, and situational cues converge, while actual purchase depends on the consumer's capacity for resistance and self-control (3). Therefore, digital shopping environments can be especially powerful because they intensify temptation while reducing the cognitive and practical effort required for purchase completion.

Individual differences also play a crucial role in determining susceptibility to impulsive purchasing. Verplanken and Herabadi conceptualized impulse buying tendency as a combination of cognitive and affective processes, where the "feeling" component reflects emotional attraction to immediate acquisition and the "no thinking" component reflects reduced deliberative control (4). This distinction is highly relevant to online shopping, because digital platforms often stimulate affective responses through visual design, urgency messages, discounts, product recommendations, and social proof, while simultaneously lowering cognitive friction through one-click purchase options and saved payment credentials. Consequently, consumers may move from product exposure to payment confirmation before engaging in sufficient evaluation of affordability, necessity, or long-term financial consequences. Meta-analytic evidence also confirms that impulse buying is a multidimensional phenomenon influenced by consumer traits, marketing stimuli, situational factors, and channel-specific mechanisms, making digital commerce a particularly important setting for examining this behavior (5).

Recent developments in social commerce have further intensified this issue. Unlike traditional e-commerce, social commerce integrates consumption with social interaction, influencer marketing, peer recommendation, visual engagement, and personalized content. Such environments increase exposure to persuasive cues and can normalize immediate purchasing by embedding commercial messages within entertainment and social communication. Research has shown that online shopping experience in social commerce contexts can significantly affect impulsive buying behavior because consumers' perceptions of enjoyment, ease of use, interaction quality, and platform engagement strengthen purchase motivation and reduce hesitation (6). In the Iranian context, personalized social media advertising has also been shown to influence consumers' unplanned purchasing behavior, indicating that targeted advertising can activate latent needs and stimulate spontaneous buying decisions (7). Similarly, the use of online shopping applications among urban youth has been associated with impulsive

buying, suggesting that mobile accessibility and app-based commercial design may intensify immediate consumption tendencies (8).

A key feature of contemporary online consumption is the increasing use of recommender systems. These systems analyze consumer data and present personalized product suggestions, often at moments when the consumer is already engaged in browsing or purchasing. From a managerial perspective, recommender systems increase conversion rates and customer retention; however, from a behavioral finance perspective, they may also increase unplanned purchases by presenting attractive options that consumers had not initially intended to buy. Studies on recommender systems indicate that personalized recommendations can shape online impulsive buying by increasing product relevance, reducing search costs, and encouraging immediate purchase decisions (9). This mechanism is especially important when combined with mobile shopping, push notifications, limited-time offers, and easy digital payment systems, because consumers are exposed to consumption cues at multiple points throughout the day and even during low-control periods such as late-night browsing.

Another important dimension of online purchasing behavior is the role of perceived risk, expectation confirmation, and optimal experience. Online impulse buying is not simply the result of irrationality; rather, it can emerge through a process in which consumers perceive the purchase environment as enjoyable, reliable, and low risk. When consumers' expectations about online shopping convenience, security, and satisfaction are confirmed, they may become more willing to make rapid and less planned purchases. Research on the determinants of online impulse buying has shown that perceived risk, expectation-confirmation mechanisms, and optimal experience can jointly influence online impulsive behavior throughout the purchasing process (10). This suggests that as consumers become more experienced and comfortable with online platforms, their perceived barriers to spontaneous purchasing may decline. Therefore, online shopping experience can have a dual effect: it may improve consumer competence and efficiency, but it may also increase repeated exposure to impulsive consumption opportunities.

The financial implications of online shopping become more serious when digital payment tools and credit-based mechanisms are added to the purchasing process. Traditional purchasing required immediate cash availability or visible financial sacrifice, whereas digital payment systems often make payment psychologically less salient. When consumers pay through stored cards, mobile wallets, installment systems, or deferred payment tools, the perceived pain of paying may be reduced. This reduction can weaken budgeting discipline and encourage consumption beyond current financial capacity. Among these tools, Buy Now, Pay Later (BNPL) and online installment payment services have become particularly important. These services allow consumers to receive goods immediately while postponing payment or dividing payment into future installments. Although such services may increase financial flexibility and purchasing power, they may also increase the likelihood of overspending, debt accumulation, and misjudgment of affordability.

Evidence from international studies indicates that BNPL systems are associated with important consumer protection concerns. The Consumer Financial Protection Bureau reported that BNPL markets have expanded rapidly and may expose consumers to risks such as overextension, data harvesting, inconsistent dispute resolution, and reduced transparency regarding credit obligations (11). Guttman-Kenney and colleagues examined BNPL as a form of credit and emphasized that deferred payment arrangements can affect consumers' debt behavior, especially when users underestimate the cumulative burden of multiple small obligations (12). More recent systematic review evidence also highlights the psychological dimensions of BNPL, showing that BNPL use is closely connected with impulsive buying, post-purchase regret, and emotionally driven consumption patterns (13). These findings indicate

that BNPL should not be treated merely as a payment innovation, but as a behavioral-financial mechanism that can reshape the relationship between desire, purchase, debt, and regret.

The intention to use online installment payment services is influenced by multiple factors, including convenience, perceived usefulness, trust, ease of use, and attitudes toward credit. Wang and colleagues found that consumers' purchase intention toward online installment payment services is shaped by both technological and psychological determinants, indicating that payment-service adoption depends not only on financial need but also on perceived benefits and platform-level experience (14). In the Iranian consumer context, financial literacy has been found to affect installment purchasing behavior, suggesting that consumers with stronger financial knowledge may evaluate deferred payment risks more carefully, whereas those with weaker financial literacy may be more vulnerable to excessive installment use (15). This issue is particularly relevant in urban markets where rising living costs, inflationary pressures, and widespread digital commerce may encourage consumers to rely on installment purchasing as a routine consumption strategy rather than an exceptional financing tool.

Financial literacy is therefore a central factor in understanding the relationship between online shopping and financial behavior. Financial literacy refers to the knowledge and skills required to make informed financial decisions, including budgeting, saving, borrowing, debt management, and risk evaluation. Lusardi and Mitchell argue that financial literacy has substantial economic importance because individuals with insufficient financial knowledge are more likely to make poor borrowing and saving decisions, underestimate long-term costs, and experience financial vulnerability (16). In relation to online shopping, financial literacy may determine whether consumers can distinguish between affordability and payment accessibility. A product may appear affordable because it can be paid for in installments, but the actual financial burden may accumulate across multiple purchases and payment schedules. In Iran, research has also shown a relationship between financial literacy and over-indebtedness among consumers, indicating that inadequate financial knowledge can contribute to excessive debt exposure and weak financial self-regulation (17).

Consumer tendency toward online purchasing is itself shaped by several economic, technological, and psychological factors. Ranking studies of factors affecting consumers' tendency toward online shopping indicate that perceived convenience, trust, product variety, price attractiveness, and access to information can encourage online purchasing behavior (18). However, when these factors combine with personalized marketing and digital payment tools, the boundary between rational convenience and risky overconsumption becomes less clear. Consumers may initially use online shopping to save time and compare prices, but repeated exposure to promotions, installment options, and mobile-based accessibility can increase purchase frequency and reduce financial planning. Thus, the same platform features that improve market participation may also increase the probability of impulsive buying, poor budgeting, and reliance on credit.

From a management perspective, studying the effect of online shopping on consumers' financial behavior is important for several reasons. First, firms increasingly design customer journeys around frictionless payment, personalized recommendations, and repeated engagement. While these strategies improve sales performance, they may also create ethical and regulatory concerns if they encourage financially vulnerable consumers to overconsume. Second, financial institutions and fintech companies are becoming central actors in the online consumption ecosystem through BNPL, installment credit, digital wallets, and embedded finance. Their services can improve access to consumption but can also increase hidden credit risk. Third, policymakers and consumer protection agencies need empirical evidence to understand which online shopping patterns are most strongly

associated with risky financial behavior. Fourth, consumers themselves need greater awareness of how digital platforms influence spending, saving, and borrowing decisions.

Despite the growing literature on impulse buying, digital commerce, and BNPL, several research gaps remain. Many studies examine online impulsive buying as a marketing outcome, but fewer studies connect online shopping patterns with broader financial behavior dimensions such as budgeting, saving management, overdraft use, and credit reliance. Moreover, international BNPL studies provide valuable insights, but consumer behavior may differ across social, cultural, economic, and regulatory contexts. In Iran, where online shopping has expanded rapidly and installment-based digital payment services are increasingly visible, empirical evidence remains limited regarding how frequency of online purchases, mobile shopping, nighttime buying, average purchase amount, installment usage, and number of installments relate to financial-risk behaviors. Existing Iranian studies have addressed personalized advertising, online shopping applications, financial literacy, and installment purchasing separately (7, 8, 15, 17), but a more integrated model is needed to examine how these variables jointly predict consumer financial behavior.

Accordingly, the present study focuses on online consumers in Tehran and examines financial behavior through three major dimensions: impulsive buying, budgeting and saving management, and bank overdraft and credit usage. This multidimensional approach allows the study to move beyond purchase intention or impulse buying alone and to assess whether specific online shopping patterns are associated with healthier or riskier financial behavior. In particular, the study gives special attention to online installment payment services because the literature suggests that BNPL and deferred payment tools can intensify impulsive consumption and debt-related vulnerability (11-13). By combining demographic variables, online shopping patterns, and financial behavior indicators, the study contributes to the management literature by clarifying how digital consumption practices may shape consumer financial outcomes in an urban emerging-market context.

The aim of the present study was to examine the impact of online shopping, particularly digital payment tools and online installment payment services, on consumers' financial behavior among online consumers in Tehran.

Methods and Materials

The present study was applied in terms of purpose and descriptive-survey correlational in terms of methodology. The statistical population consisted of all online consumers residing in Tehran who had completed at least three online purchases during the second half of 2025. Given the unlimited nature of the population, the sample size was estimated using Cochran's formula for infinite populations with a 95% confidence level and a margin of error of 0.05, resulting in a required sample of 384 participants. In order to increase precision and compensate for incomplete questionnaires, a total of 420 questionnaires were distributed, of which 402 questionnaires (95.7%) were deemed valid and suitable for final analysis.

A multistage combined sampling method was employed. Initially, municipal districts 2, 5, and 8 of Tehran were randomly selected through cluster sampling. Subsequently, participants were recruited through both physical online retail delivery points and the dissemination of the questionnaire link via social media platforms associated with online shopping, particularly Instagram and Telegram. Sampling at this stage was conducted using convenience sampling with quota control based on gender and age categories to ensure demographic balance within the sample. Data collection procedures were carried out from October 2025 to March 2026. Prior to questionnaire distribution, the objectives of the study were fully explained to participants, and written informed consent was obtained from all

respondents. Participants were assured that their information would remain confidential and would be used solely for research purposes. They were also informed that participation was voluntary and that they could withdraw from the study at any stage without consequence. To comply with research ethics principles, no personally identifiable information, such as names, phone numbers, or precise addresses, was collected in the questionnaire.

Data were collected using a researcher-developed questionnaire designed in three sections. The first section consisted of eight items related to demographic characteristics, including age, gender, educational level, monthly income, and marital status. Age was measured through an open-ended numerical response, while gender was categorized as male or female. Educational level was classified into four categories: diploma or below, bachelor's degree, master's degree, and doctoral degree. Monthly income was measured across five income brackets, and marital status was recorded as single or married.

The second section included 12 items designed to assess online shopping patterns. All items were developed in quantitative formats to allow statistical measurement and analysis. The variables included the number of online purchases during the current month, the average amount spent per online purchase during the previous three months, the percentage of purchases conducted through mobile phones, the frequency of using online installment payment services or Buy Now, Pay Later (BNPL) tools during the last ten purchases, the average number of installments used in installment payments, years of online shopping experience, average time spent per visit to online stores, frequency of product returns during the previous six months, satisfaction with the online shopping experience rated on a scale from 0 to 10, frequency of nighttime shopping between midnight and 6 a.m. during the previous month, and the average number of products reviewed before making a final purchase decision. Most items were measured using open-ended numerical responses, while continuous scales were applied where appropriate.

The third section consisted of 20 items measured on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5) to evaluate consumers' financial behavior across three dimensions: impulsive buying, budgeting and saving management, and bank overdraft and credit usage. The impulsive buying dimension included seven items, such as "I often make online purchases suddenly and without prior planning." The budgeting and saving management dimension contained six items, including statements such as "I review my monthly budget before making online purchases." The bank overdraft and credit usage dimension included seven items, such as "I have used bank overdraft facilities for my online purchases."

To establish content validity, the preliminary version of the questionnaire was evaluated by seven faculty members specializing in financial management and marketing, including three experts from the University of Tehran, two from Shahid Beheshti University, and two from Allameh Tabataba'i University. Following their feedback, three items from the third section were removed, and five additional items were revised linguistically and conceptually. Construct validity was assessed using confirmatory factor analysis in Amos software, and all factor loadings were found to be significant and above 0.50 ($p < 0.001$). Reliability was assessed using two approaches. Cronbach's alpha coefficient for the entire instrument was 0.87, while the coefficients for the three dimensions were 0.84, 0.81, and 0.85, respectively. In addition, test–retest reliability was examined over a two-week interval with 30 participants, yielding a reliability coefficient of 0.89. These findings indicated satisfactory validity and reliability of the research instrument.

Data analysis was conducted using SPSS version 28 and Amos version 24. Initially, the normality of quantitative variables was assessed using the Kolmogorov–Smirnov test. The results indicated that the data did not follow a normal distribution ($p < 0.05$); therefore, nonparametric statistical tests were employed for subsequent analyses.

To examine differences in financial behavior across demographic groups such as gender, income level, and educational attainment, the Mann–Whitney U test and Kruskal–Wallis test were utilized.

Spearman's rank-order correlation coefficient was calculated to assess the relationships between the principal online shopping variables, including frequency of online purchases, average purchase amount, percentage of mobile-based shopping, frequency of installment payment usage, online shopping experience, and dimensions of financial behavior. Furthermore, multinomial logistic regression analysis was employed to determine the predictive contribution of online shopping dimensions to different levels of financial behavior risk. Statistical significance for all analyses was set at 0.05.

Findings and Results

According to the results presented in Table 1, more than half of the sample participants were female (57.5%), and the mean age of the participants was 34.7 years, indicating that the study primarily involved young and middle-aged individuals. Regarding marital status, 63.2% of participants were married and 36.8% were single. The highest level of educational attainment was associated with bachelor's degree holders (45.8%), followed by master's degree holders (26.4%). Monthly income was most frequently reported in the range of 10 to 20 million Tomans (35.6%), whereas only 6% of respondents reported monthly incomes above 40 million Tomans. In terms of occupation, private-sector employees (30.1%) and government employees (23.1%) represented the largest groups. Most respondents (55.7%) lived in households consisting of three to four family members, and the dominant housing statuses were rental housing (49.0%) and private home ownership (41.8%). Overall, this demographic composition is relatively representative of the urban middle-class population of Tehran in 2025 (Table 1).

Table 1. Demographic Characteristics of the Study Sample

Variable	Category	Frequency	Percentage
Gender	Female	231	57.5
	Male	171	42.5
Marital Status	Married	254	63.2
	Single	148	36.8
Education	Diploma and Below	72	17.9
	Bachelor's Degree	184	45.8
	Master's Degree	106	26.4
	Doctoral Degree	40	10.0
Monthly Income (Million Tomans)	Less than 10	58	14.4
	10–20	143	35.6
	20–30	126	31.3
	30–40	51	12.7
	More than 40	24	6.0
Occupation	Private-Sector Employee	121	30.1
	Government Employee	93	23.1
	Self-Employed	88	21.9
	Student	54	13.4
	Homemaker	32	8.0
	Unemployed	14	3.5
Family Size	1–2 Members	76	18.9
	3–4 Members	224	55.7
	5 or More Members	102	25.4
Housing Status	Private Ownership	168	41.8
	Rental	197	49.0
	Organizational or Family-Dependent	37	9.2

To assess the normality of data distribution, the Kolmogorov–Smirnov test was performed on the scores of all three dimensions of financial behavior (Table 2). Given that the significance levels for all dimensions were below 0.05, the assumption of normality was rejected, thereby confirming the use of nonparametric statistical tests for group comparisons and correlation analyses.

Table 2. Results of the Kolmogorov–Smirnov Test for Normality of Financial Behavior Variables

Row	Variable	Z Statistic	p-value
1	Frequency of Online Purchases per Month	1.842	0.002
2	Average Amount per Purchase (Million Tomans)	1.653	0.008
3	Percentage of Purchases via Mobile Phone	2.103	0.001
4	Frequency of Installment Payment Usage in Last 10 Purchases	1.976	0.001
5	Average Number of Installments	2.247	0.001
6	Online Shopping Experience (Years)	1.512	0.020
7	Average Time Spent per Visit (Minutes)	3.065	0.001
8	Frequency of Product Returns During Last Six Months	3.114	0.001
9	Satisfaction with Online Shopping Experience	1.801	0.003
10	Frequency of Nighttime Purchases During Last Month	2.892	0.002
11	Average Number of Products Reviewed Before Purchase	1.435	0.032
12	Total Impulsive Buying Score (7–35)	2.054	0.001
13	Total Budgeting and Saving Management Score (6–30)	1.673	0.007
14	Total Bank Overdraft and Credit Usage Score (7–35)	2.015	0.001

The results of the Mann–Whitney U and Kruskal–Wallis tests indicated that there was a significant difference between females and males in the impulsive buying dimension (Table 3). Educational level also significantly affected this type of financial behavior, whereas income differences did not show a statistically significant effect on impulsive buying. In the budgeting and saving management dimension, significant gender differences were also observed, and income level significantly influenced this dimension, while educational level did not show a significant relationship. Regarding bank overdraft and credit usage, none of the variables of gender, education, or income produced statistically significant differences, although the obtained values for education and income were close to the significance threshold. Overall, the findings suggest that gender played a more important role than income and education in certain dimensions of financial behavior, and that demographic variables did not exert uniform effects across all dimensions of financial behavior.

Table 3. Comprehensive Results of Mann–Whitney U and Kruskal–Wallis Tests

Financial Behavior Dimension	Grouping Variable	Test Statistic	df	p-value
Impulsive Buying	Gender (Female/Male)	U = 13452.0	–	0.003
	Education (4 Groups)	H = 9.47	3	0.024
	Income (5 Groups)	H = 5.63	4	0.228
Budgeting and Saving Management	Gender (Female/Male)	U = 12891.5	–	0.011
	Education (4 Groups)	H = 4.21	3	0.239
	Income (5 Groups)	H = 11.82	4	0.019
Bank Overdraft and Credit Usage	Gender (Female/Male)	U = 16843.0	–	0.211
	Education (4 Groups)	H = 6.83	3	0.077
	Income (5 Groups)	H = 8.91	4	0.063

To examine the relationships between the principal variables, including frequency of online purchases, average amount per purchase, percentage of mobile-phone shopping, frequency of installment payment usage, online shopping experience, and dimensions of financial behavior, Spearman’s correlation coefficient was calculated.

Table 4. Spearman Correlation Matrix Between Online Shopping Pattern Variables and Financial Behavior Dimensions

Row	Online Shopping Pattern Variables	Impulsive Buying	Budgeting and Saving Management	Bank Overdraft and Credit Usage
1	Frequency of Online Purchases per Month	0.47**	-0.12*	0.34**
2	Average Amount per Purchase	0.34**	-0.18**	0.28**
3	Percentage of Purchases via Mobile Phone	0.26**	-0.07	0.31**
4	Frequency of Installment Payment Usage	0.63**	-0.35**	0.58**
5	Average Number of Installments	0.41**	-0.22**	0.44**
6	Online Shopping Experience	0.15*	0.08	0.17*
7	Average Time Spent per Visit	0.33**	-0.14*	0.26**
8	Frequency of Product Returns	0.29**	-0.20**	0.35**
9	Satisfaction with Online Shopping	0.22**	-0.01	0.19**
10	Frequency of Nighttime Purchases	0.37**	-0.17**	0.33**
11	Average Number of Products Reviewed Before Purchase	-0.11	0.09	-0.04

**p < 0.01

In summary, the most important findings derived from Spearman's correlation analysis indicate that the use of online installment payment services exhibited the strongest relationship with financial behavior. Specifically, it showed a positive correlation with impulsive buying (r = 0.63) and bank overdraft behavior (r = 0.58), while demonstrating a negative correlation with budgeting and saving management (r = -0.35). The frequency of online purchases and nighttime shopping also showed positive relationships with impulsive buying and overdraft behavior, and negative relationships with budgeting management. In contrast, the average number of products reviewed before purchase did not show any significant relationship with financial behavior dimensions. Other variables, including average purchase amount, percentage of mobile-phone shopping, number of installments, time spent browsing, product returns, and shopping satisfaction, demonstrated weak to moderate correlations. Overall, variables associated with installment payments and repetitive purchasing patterns emerged as the primary predictors of risky financial behavior.

Table 5. Spearman Correlation Matrix Between Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Frequency of Purchases per Month	1													
2. Average Amount per Purchase	0.45**	1												
3. Percentage of Mobile Purchases	0.32**	0.26**	1											
4. Frequency of Installment Payments	0.52**	0.43**	0.35**	1										
5. Average Number of Installments	0.38**	0.34**	0.29**	0.61**	1									
6. Shopping Experience (Years)	0.22**	0.18*	-0.10	0.15*	0.12*	1								
7. Time Spent per Visit	0.29**	0.24**	0.19*	0.33**	0.27**	0.05	1							
8. Frequency of Product Returns	0.31**	0.22**	0.16*	0.39**	0.32*	0.08	0.36**	1						
9. Satisfaction with Shopping	0.14*	0.12*	0.09	0.18*	0.13*	0.10	0.17*	-0.11	1					
10. Frequency of Nighttime Purchases	0.41**	0.33**	0.28**	0.45**	0.36**	0.13*	0.30*	0.34**	0.15*	1				
11. Number of Products Reviewed	-0.04	0.06	-0.11	0.08	0.03	0.07	0.12*	-0.05	0.02	0.01	1			
12. Impulsive Buying	0.47**	0.34**	0.26**	0.63**	0.41**	0.15*	0.33*	0.29**	0.22**	0.37**	-0.11	1		
13. Budgeting/Saving Management	-0.12*	-0.18**	-0.07	-0.35**	-0.22**	0.08	-0.14*	-0.20**	-0.10	-0.17**	0.09	-0.44**	1	
14. Bank Overdraft	0.34**	0.28**	0.31**	0.58**	0.44**	0.17*	0.26**	0.35**	0.19*	0.33**	-0.04	0.61**	-0.38**	1

*p < 0.05, **p < 0.01

The above matrix demonstrates that the highest correlations were naturally observed among variables associated with installment payment behavior. For example, the frequency of installment payment usage had a correlation coefficient of 0.61 with the average number of installments, 0.63 with impulsive buying, and 0.58 with bank overdraft behavior. Furthermore, impulsive buying showed a strong positive correlation with bank overdraft behavior (r = 0.61), indicating that these two behavioral dimensions are highly interrelated. On the other hand, budgeting and saving management displayed significant negative correlations with both impulsive buying (r = -0.44) and bank overdraft behavior (r = -0.38). The variable representing the average number of products reviewed before purchase demonstrated almost no meaningful correlations with other variables, with the exception of a very weak correlation with time spent per visit (r = 0.12), suggesting that this variable functions as a neutral factor in predicting financial behavior. This correlation matrix may serve as a basis for subsequent multivariate analyses and structural equation modeling procedures (Table 5).

Table 6. Results of Multinomial Logistic Regression for Predicting Financial Behavior (Reference Category: Healthy Financial Behavior)

Predictor Variable	Moderate-Risk Group vs. Healthy			Very High-Risk Group vs. Healthy		
	B (SE)	OR	95% CI for OR	B (SE)	OR	95% CI for OR
Constant	-0.42	0.37	—	-2.53	0.14	—
Frequency of Purchases per Month	0.24 (0.09)	1.27	1.07–1.51	0.51** (0.11)	1.66	1.34–2.06
Average Amount per Purchase	0.18 (0.08)	1.20	1.02–1.41	0.33** (0.10)	1.39	1.14–1.69
Percentage of Mobile Purchases	0.01 (0.004)	1.01	1.00–1.02	0.02** (0.006)	1.02	1.01–1.03
Frequency of Installment Payments	0.52** (0.11)	1.68	1.35–2.09	0.94** (0.14)	2.56	1.94–3.38
Average Number of Installments	0.22** (0.09)	1.25	1.05–1.49	0.41** (0.12)	1.51	1.19–1.91
Frequency of Nighttime Purchases	0.17* (0.07)	1.19	1.03–1.37	0.36** (0.10)	1.43	1.18–1.74
Age (Years)	-0.03 (0.02)	0.97	0.93–1.01	-0.07* (0.02)	0.93	0.89–0.97
Education (Master's/Doctorate vs. Lower Education)	-0.51* (0.18)	0.60	0.42–0.86	-0.83** (0.22)	0.44	0.29–0.67

*p < 0.05, **p < 0.01

After entering the significant variables, the final model correctly classified 71.4% of participants into the three financial behavior categories. The findings indicated that the strongest predictor of membership in the very high-risk financial behavior group, compared with the healthy group, was the frequency of installment payment usage, with an odds ratio of 2.56, indicating that a one-unit increase in the 0–10 scale increased the likelihood of belonging to the very high-risk group by 156%. This was followed by the frequency of monthly purchases (OR = 1.66) and the average number of installments (OR = 1.51). The frequency of nighttime purchases also increased the probability of membership in the very high-risk group by 43%.

In contrast, older age and higher educational attainment played protective roles. Each additional year of age reduced the likelihood of belonging to the very high-risk group by 7% (OR = 0.93), while having a master's degree or doctoral degree, compared with lower educational levels, reduced the likelihood of membership in the very high-risk group by 56% (OR = 0.44). A similar but weaker pattern was observed for the moderate-risk group. Specifically, the frequency of installment payment usage increased the likelihood of membership in the moderate-risk group by 68% (OR = 1.68), the frequency of purchases by 27%, and the average number of installments by 25%. The percentage of purchases conducted through mobile phones was statistically significant only in the very high-risk group, and its effect size was minimal, representing a 2% increase in odds for each unit increase. Variables such as time spent per visit, frequency of product returns, and online shopping experience were excluded from the final

model due to nonsignificance after controlling for other variables (Table 6). Overall, the findings emphasize that frequent use of installment payment services and high purchase frequency are the primary risk factors for the development of risky financial behavior, whereas increasing age and higher educational attainment function as protective factors.

Discussion and Conclusion

The findings of the present study demonstrated that online shopping patterns, particularly the use of online installment payment services, are significantly associated with consumers' financial behavior. One of the most important findings was that the use of online installment payment tools showed the strongest positive relationship with impulsive buying and bank overdraft behavior, while simultaneously exhibiting a negative relationship with budgeting and saving management. These findings indicate that consumers who rely more heavily on installment-based digital payment systems are more likely to engage in financially risky behaviors and less likely to demonstrate structured financial management. This result is highly consistent with recent studies emphasizing the psychological and behavioral consequences of Buy Now, Pay Later (BNPL) services. Systematic review evidence suggests that BNPL systems reduce consumers' sensitivity to immediate financial costs and increase impulsive purchasing tendencies as well as post-purchase regret (13). Similarly, research on BNPL credit behavior showed that installment-based digital payment systems may normalize repeated debt accumulation and encourage consumers to underestimate long-term repayment obligations (12). The findings of the present study support these perspectives by demonstrating that installment payment usage is not merely a financial convenience but a strong predictor of risky financial behavior patterns.

The positive relationship between installment payment usage and impulsive buying can also be interpreted through classical consumer behavior theories. According to Dholakia's integrated model of consumption impulse formation, impulsive buying occurs when immediate temptation exceeds consumers' resistance capacity (3). Online installment systems reduce the psychological pain of payment because consumers do not experience the full financial sacrifice at the moment of purchase. Consequently, consumers may focus primarily on product desirability rather than affordability. This process weakens cognitive evaluation and increases affect-driven purchasing decisions. In addition, the findings align with the perspective proposed by Verplanken and Herabadi, who argued that impulsive buying tendencies involve emotional activation combined with reduced deliberative thinking (4). Digital installment systems appear to intensify both dimensions simultaneously by increasing emotional accessibility to products while decreasing immediate financial barriers.

Another important finding was the significant relationship between the frequency of online purchases and risky financial behavior dimensions. Consumers with higher purchase frequency demonstrated higher levels of impulsive buying and bank overdraft behavior and lower levels of budgeting and saving management. This finding suggests that repeated exposure to online shopping environments may gradually normalize spontaneous consumption behavior. Online shopping platforms continuously expose users to advertisements, product recommendations, discounts, and social cues that stimulate consumption impulses. Repeated engagement with such environments may strengthen habitual purchasing patterns and reduce self-regulation over time. These findings are consistent with studies indicating that online shopping applications and social commerce environments significantly increase impulsive purchasing behavior among consumers (6, 8). Similarly, Ahmadi and Rezaei demonstrated that personalized social media advertising can increase unplanned purchasing behavior by activating latent desires and

increasing emotional engagement with products (7). Therefore, the current findings suggest that purchase frequency itself may function as an indicator of repeated psychological exposure to persuasive digital consumption environments.

The findings also revealed that nighttime shopping behavior was positively associated with impulsive buying and overdraft behavior while negatively associated with budgeting management. This result may be interpreted through self-regulation and cognitive depletion theories. During late-night hours, consumers may experience reduced cognitive control, mental fatigue, and lower resistance to temptation, making them more susceptible to impulsive purchasing. Because online shopping environments remain continuously accessible, consumers can engage in purchasing behavior at moments when self-regulatory capacity is weakened. This interpretation aligns with LaRose's sociocognitive perspective, which argues that online environments may weaken traditional regulatory constraints and encourage unregulated purchasing behavior (1). The convenience and immediacy of online shopping may therefore interact with temporal psychological factors to intensify risky financial behavior.

The present findings further showed that mobile-phone shopping percentage had a positive relationship with overdraft behavior and impulsive buying, although its predictive strength was smaller than installment payment usage and purchase frequency. This result nevertheless highlights the importance of mobile accessibility in shaping consumption behavior. Mobile devices allow consumers to remain continuously connected to digital marketplaces through notifications, social media advertisements, and shopping applications. The portability and immediacy of mobile commerce reduce the temporal gap between desire and purchase execution. Research on recommender systems and online shopping environments indicates that personalized and continuously accessible digital interfaces can intensify online impulsive buying by reducing search costs and increasing purchase convenience (9). Therefore, although mobile shopping alone may not fully explain risky financial behavior, it likely acts as a facilitating mechanism that increases exposure to consumption opportunities.

The negative relationship observed between budgeting and saving management and most online shopping variables is another significant finding of the study. Consumers who reported higher levels of installment payment usage, higher purchase frequency, greater average purchase amounts, and more nighttime shopping tended to report weaker budgeting and saving practices. This result is highly consistent with financial literacy theories emphasizing the importance of planning, delayed gratification, and expenditure monitoring in maintaining healthy financial behavior (16). Digital shopping environments may undermine these processes because payment systems are designed to maximize convenience and minimize purchasing friction. When consumers can rapidly complete transactions without direct confrontation with immediate financial consequences, they may engage less frequently in budgeting and expenditure evaluation.

The protective effects of age and higher educational attainment represent another important aspect of the findings. The regression analysis demonstrated that older participants and individuals with higher levels of education were less likely to belong to high-risk financial behavior groups. These results are theoretically meaningful because age and education are often associated with greater financial experience, improved self-regulation, and stronger financial literacy. Prior research has consistently shown that financial literacy reduces the likelihood of poor financial decision-making and excessive indebtedness (16). In the Iranian context, studies have also reported that consumers with stronger financial literacy demonstrate more responsible installment purchasing behavior and lower over-indebtedness (15, 17). The present study extends these findings by demonstrating that education and age not only

influence financial knowledge but also appear to function as protective factors against digitally facilitated risky consumption behavior.

Interestingly, the variable representing the average number of products reviewed before purchase showed almost no meaningful relationship with financial behavior dimensions. This finding suggests that simply browsing or comparing multiple products does not necessarily increase impulsive buying or financial risk. In fact, reviewing products before purchase may represent a more deliberative and information-oriented purchasing style. Consumers who compare products extensively may engage in more cognitive processing and therefore resist immediate emotional purchasing impulses. This finding indirectly supports the distinction proposed by Verplanken and Herabadi between emotional and cognitive aspects of impulsive buying (4). The absence of strong correlations for this variable suggests that exposure alone is not sufficient to create risky financial behavior unless combined with emotionally activating or frictionless purchasing mechanisms.

The findings related to demographic differences also provide important insights. Gender differences were significant in impulsive buying and budgeting behavior but not in overdraft behavior. This suggests that gender may influence emotional and planning-related aspects of financial behavior more strongly than formal credit usage patterns. Previous research on online impulse buying has frequently reported demographic variations in digital purchasing behavior, particularly regarding emotional responsiveness to marketing stimuli and shopping experiences (6, 10). However, the current findings indicate that demographic variables alone are not sufficient to explain risky financial behavior. Instead, platform-related and payment-related variables appear to exert stronger and more direct effects.

The multinomial logistic regression findings are especially important because they clarify the relative predictive power of online shopping variables. The strongest predictor of membership in the very high-risk financial behavior group was the frequency of installment payment usage, followed by frequency of purchases and average number of installments. These findings indicate that the structure of digital payment systems may be more influential than general online shopping engagement itself. Consumers who repeatedly divide payments into installments may psychologically underestimate cumulative debt obligations, particularly when multiple installment plans overlap. This interpretation strongly aligns with recent concerns raised by consumer protection institutions regarding the hidden financial risks associated with BNPL systems (11). The present findings therefore contribute to the growing literature emphasizing that installment-based digital finance may create a perception of affordability that differs substantially from actual long-term financial burden.

The study also contributes to management and marketing literature by demonstrating that online shopping behavior should not be analyzed solely from a sales or consumer satisfaction perspective. Although digital commerce increases accessibility, convenience, and market participation, it may also create financial vulnerabilities among consumers. Modern digital marketing systems are designed to maximize engagement, personalization, and conversion rates. Personalized recommendations, one-click payments, installment financing, and mobile accessibility collectively reduce consumer resistance to purchasing. As a result, firms may unintentionally contribute to patterns of overconsumption and weak financial management. This observation is consistent with previous studies showing that online environments can intensify impulsive buying through personalized advertising, social commerce interaction, and recommendation systems (6, 7, 9). Therefore, the findings suggest that managers and policymakers should evaluate not only the economic effectiveness of digital commerce tools but also their long-term behavioral and financial consequences for consumers.

Another important implication of the findings concerns the relationship between technological innovation and consumer self-regulation. Online shopping technologies are frequently promoted as tools for efficiency and convenience; however, the current results demonstrate that convenience itself may function as a behavioral risk factor when combined with easy credit access and emotionally stimulating digital environments. Consumers may gradually shift from planned purchasing behavior toward reactive and emotionally driven consumption patterns. This issue is particularly important in emerging digital economies where financial literacy levels may vary considerably across demographic groups. The findings therefore reinforce the argument that technological convenience without adequate financial awareness may increase consumer vulnerability to financial instability.

The present study also expands existing Iranian research by integrating online shopping patterns, installment payment usage, and multidimensional financial behavior within a single analytical framework. Previous studies in Iran have primarily focused on isolated dimensions such as online impulsive buying, financial literacy, or installment purchasing behavior separately (8, 15, 17). In contrast, the present study demonstrates that these variables are deeply interconnected and collectively shape consumer financial behavior. The findings therefore provide a more comprehensive understanding of how digital commerce environments influence budgeting, saving, borrowing, and impulsive consumption simultaneously.

One limitation of the present study is that the data were collected using self-report questionnaires, which may increase the possibility of social desirability bias and inaccurate reporting of financial behavior. Some participants may have underestimated behaviors such as impulsive buying, overdraft usage, or excessive installment purchasing. In addition, the cross-sectional design of the study limits the ability to establish causal relationships between online shopping patterns and financial behavior. Another limitation is that the study focused only on online consumers in Tehran, which may reduce the generalizability of the findings to rural populations or consumers in smaller cities with different socioeconomic conditions and digital access levels.

Future research is recommended to employ longitudinal and experimental designs in order to better identify causal relationships between online shopping behavior and financial outcomes over time. Researchers may also examine the moderating roles of psychological variables such as self-control, materialism, anxiety, financial stress, and post-purchase regret in the relationship between online installment payment usage and risky financial behavior. Comparative studies across different cultural and economic contexts may further clarify how social norms, inflationary conditions, and digital infrastructure influence consumers' responses to BNPL systems and online shopping environments. In addition, future studies could investigate the behavioral effects of specific platform features such as push notifications, recommendation algorithms, and dynamic pricing mechanisms.

From a practical perspective, the findings suggest the need for stronger consumer financial education programs focused specifically on digital shopping and installment payment systems. Policymakers and financial institutions should improve transparency regarding repayment obligations, cumulative installment exposure, and long-term debt risks associated with BNPL services. Online retailers and fintech companies may also benefit from implementing ethical design strategies, such as spending alerts, installment burden calculators, and optional budgeting reminders, to reduce financially risky consumer behavior. Universities, schools, and public institutions can further contribute by integrating digital financial literacy training into educational programs to help consumers develop healthier budgeting and online spending habits in increasingly digitalized marketplaces.

Acknowledgments

We would like to express our appreciation and gratitude to all those who helped us carrying out this study.

Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

All ethical principles were adheried in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

References

1. LaRose R. On the negative effects of e-commerce: A sociocognitive exploration of unregulated online buying. Journal of Computer-Mediated Communication. 2001;6(3):JCMC631. doi: 10.1111/j.1083-6101.2001.tb00113.x.

2. Rook DW, Fisher RJ. Normative influences on impulsive buying behavior. Journal of Consumer Research. 1995;22(3):305-13. doi: 10.1086/209452.

3. Dholakia UM. Temptation and resistance: An integrated model of consumption impulse formation and enactment. Psychology & Marketing. 2000;17(11):955-82. doi: 10.1002/1520-6793(200011)17:11<955::AID-MAR3>3.0.CO;2-J.

4. Verplanken B, Herabadi AG. Individual differences in impulse buying tendency: Feeling and no thinking. European Journal of Personality. 2001;15(S1):S71-S83. doi: 10.1002/per.423.

5. Iyer GR, Blut M, Xiao SH, Grewal D. Impulse buying: A meta-analytic review. Journal of the Academy of Marketing Science. 2020;48(3):384-404. doi: 10.1007/s11747-019-00670-w.

6. Amin M, Ryu K, Zhang J. Effects of online shopping experience on impulsive buying behavior in social commerce context. Journal of Retailing and Consumer Services. 2022;68:103-12. doi: 10.1016/j.jretconser.2022.103112.

7. Ahmadi S, Rezaei M. The effect of personalized social media advertising on consumers' unplanned purchasing behavior. Modern Marketing Studies. 2021;11(2):55-74.

8. Esmi M, Hosseini A, Rezaei F. Investigating the effect of using online shopping applications on impulsive buying behavior among urban youth. Business Management Research. 2022;14(3):91-112.

9. Zhu H, Deng S, Chang Y, editors. Understanding the role of recommender systems in online impulsive buying behavior. Proceedings of the ACM Conference on Recommender Systems; 2016.

10. Hejbori A, Ghanbari S. Determinants of online impulse buying through the purchasing process integrating perceived risk, expectation-confirmation model, and optimal experience. Development and Transformation Management. 2020;12(4):134-4115.

11. Consumer Financial Protection B. Buy now, pay later: Market trends and consumer impacts. Washington, DC: Consumer Financial Protection Bureau, 2022.

12. Guttman-Kenney B, Firth C, Gathergood J, Jones J. Buy now, pay later (BNPL) on credit. Journal of Financial Counseling and Planning. 2022;33(1):5-19. doi: 10.1891/JFCP-2021-006.

13. Nusir OM, Wel CAC, Hamid SNA, Al-Zoubi L, Al-Adwan AS. The psychology of BNPL: A systematic review of impulsive buying and post-purchase regret (2018-2025). Journal of Theoretical and Applied Electronic Commerce Research. 2026;21(2):43. doi: 10.3390/jtaer21020043.

14. Wang Y, Wang J, Lin H, Tang T. Determinants of consumers' purchase intention toward online installment payment services. Sustainability. 2020;12(20):1-18. doi: 10.3390/su12208367.

15. Barati M, Taleghani M. The effect of financial literacy on installment purchasing behavior among Iranian consumers. Business Management Research. 2023;15(2):71-90.

16. Lusardi A, Mitchell OS. The economic importance of financial literacy: Theory and evidence. Journal of Economic Literature. 2014;52(1):5-44. doi: 10.1257/jel.52.1.5.

17. Moeinoddin M, Hosseini A, Rezaei F. Investigating the relationship between financial literacy and over-indebtedness among Iranian consumers. Financial Research. 2020;22(3):89-108.

18. Pourabrahim E. Ranking the factors affecting consumers' tendency toward online purchasing. Business Reviews. 2019(103):65-88.